Fritts, H.C. 1976. Tree Rings and Climate. Academic Press. New York, New York. 567 pp.

Guyette, R., E.A. McGinnes, Jr., G.E. Probasco, \& K.E. Evans. 1980. A climate history of Boone County Missouri, from tree-ring analysis of eastern redcedar. Wood and Fibre 12: 17-28.

Guyette, R., E.A. McGinnes, Jr., \& S. Leduc. 1982. Climatic history in the Ozark region as reconstructed from tree rings of eastern redcedar and white oak. Missouri Academy of Science 7: 80-111.

Kelly, P.E., E.R. Cook, \& D.W. Larson. 1992. Constrained growth, cambial mortality and dendrochronology of ancient Thuja occidentalis on cliffs of the Niagara Escarpment: an eastern version of bristlecone pine. International Journal of Plant Sciences 153: 117-127.

Kelly, P.E., E.R. Cook, \& D.W. Larson. 1994. A 1397-
year tree-ring chronology of Thuja occidentalis from cliffs of the Niagara Escarpment. Canadian Journal of Forest Research 24: 1049-1057.

Kuo, M.L., \& E.A. McGinnes Jr.. 1973. Variation of anatomical structure of false rings in eastern redcedar. Wood Science 5: 205-2 10.

Larson, D.W., S.H. Spring, U. Matthes-Sears \& R.M. Bartlett. 1989. Organization of the Niagara Escarpment Cliff community. Canadian Journal of Botany 67: 2731-2742.

Larson, D.W., \& P.E. Kelly. 1992. The extent of oldgrowth Thuja occidentalis on cliffs of the Niagara Escarpment. Canadian Journal of Botany 69: 16281636.

Stokes, M.A., \& T.L. Smiley. 1968. An Introduction to Tree-ring Dating. University of Chicago Press. Chicago, Illinois.

# Two Orthopteroid Insects New to the Virginia Fauna (Saltatoria: Conocephalidae; Blattaria: Blattidae) 

Richard L. Hoffman<br>Virginia Museum of Natural History Martinsville, Virginia 24112

Although there are no published lists of the various insects groups formerly included in the order Orthoptera known to occur in Virginia, a number of fairly compre-hensive accounts for the state fauna (e.g., Fox, 1917; Rehn \& Hebard, 1916) or specific regions (e.g, Davis, 1926; Hebard, 1945) collectively give an impression of these insects in the Commonwealth. It is clear, however, that a considerable number remain to be collected and recorded, a good example being the camel crickets, genus Ceuthophilus as evident from the distribution maps in Hubbell's 1936 revision of that group. The extreme southeastern and southwestern parts of the state seem most likely to yield overlooked resident hexapods, and I provide here some documentation on two species inhabiting the former
area. One is large but apparently not common, the other is small but widepsread and actually extremely abundant at most of its known localities.

## Order Saltatoria (Orthoptera) <br> Family Conocephalidae

## Pyrgocorypha uncinata (Harris)

Blatchley (1926: 511) stated that "...the species is known to range from Clarksville, Tenn., and Raleigh, N. Car., west and south to Arkansas, Texas, Cuba, Mexico, and Central America, though very few records of its occurrence in the United States


Fig. 1 Distributional localities for Pyrgocorypha uncinata in Virginia and North Carolina. Dashed lines show east and west boundaries of the Piedmont.
have been made." Brimley's list (1938) of North Carolina insects added no localities further north or east than Raleigh, and I am not aware of any published for Virginia. Specimens recently seen by me, however, establish this species as a member of our Coastal Plain fauna.

City of Suffolk: Holland, at the Virginia Agricultural Experiment Station, 9 June 1975. J. W. Jenkins (VPISU 10). Greensville Co.: ca, $1 \mathrm{mi} / 1.6 \mathrm{~km}$ east of Claresville, end of Cty. Rte. 666, 25 March 1994, museum survey (VMNH 10). James City Co.: Williamsburg, collector not specified (USNM 2)

These localities imply that uncinata probably occurs throughout the southeastern Virginia Coastal Plain, north at least as far as the York-James Peninsula. The Williamsburg locality extends the known range of the species about $150 \mathrm{mi} . / 240 \mathrm{~km}$ northeast of Raleigh.

The Holland specimen was taken at a black light trap in a region which, although extensively cultivated, retains several nearby wooded stands. The Greensville locality is on a small sandy knoll in a small grove of sweetgum and yellow pine, surrounded by cultivated fields. Blacklight traps have been operated there on several occasions during the summer months of 19931996 without attracting any arboreal conocephalid. The specimens from Greensville County and Williamsburg were taken relatively early in the year for adult tettigonids, and may represent recent emergence from overwintering sites.

In North Carolina (Fig. 1). uncinata occurs across the Piedmont as far as Tryon, in the Blue Ridge foothills. Records for Asheboro and Raleigh suggest the possibility of Piedmont populations in Southside Virginia as well, perhaps in the vicinity of Buggs Island Lake.


Fig. 2 Pyrgocorypha uncinata, side view of head to show recurved apex

Pyrgocorvpha uncinata is one of the "cone-headed" katydids, so-called because of the elongationb of the head above the eyes. From other Virginia members of this group, uncinata is easily distinguished by the small but acute apical hook of the cone (Fig. 2) to which the specific name refers.

## Order Blattaria

Family Blattidae

## Cariblatta lutea lutea (DeSaussure \& Zehntner)

The "Little Yellow Cockroach" has been recorded from as close to Virginia as Raleigh and Roanoke Island, North Carolina (Brimley, 1938). With these as northernmost localities, it was almost inevitable that the species would be found in eastern Virginia, and it was in fact collected at Cape Henry many decades ago by entomologists from the National Museum of Natural History. (this record has apparently never been published). The species does not seem to be readily taken by conventional hand-collecting and black-lighting, but the recent application of pitfall techniques in southeastern Virginia reveals it to be actually common and widespread (Fig. 4). VMNH has about 700 prepared specimens (most still in alcohol), and undoubtedly many more are in unsorted pitfall samples. Our material was collected at the following localities:

City of Chesapeake: Fentress Naval Air Station (2). City of Virginia Beach: Seashore State Park (580); Munden Point (76); Oceana Naval Air Station (24). Greensville Co.: $1 \mathrm{mi} . / 1.6 \mathrm{~km}$ east of Claresville, end of Cty. Rte. 666 (13); $2.3 \mathrm{mi} . / 4 \mathrm{~km}$ ENE of Slate's Corner (5). Mecklenburg Co.: $1.0 \mathrm{mi} / 1.6 \mathrm{~km} \mathrm{~N}$ of Norvelle (1); $3 \mathrm{mi} / 5 \mathrm{~km}$ S of Boydton (3); Elm Hill

State Game Management Area (1). York Co.: Yorktown Naval Weapons Station (3); ponds at Grafton Natural Area Reserve (1).

The present lack of records elsewhere in southeastern Virginia may be only the result of inadequate collection. Pitfalling has been conducted in this lacuna only at the Zuni Ecologic Reserve in westernmost Isle of Wight Co., and perhaps the traps there were placed in a habitat unsuiitable for this cockroach. The low numbers of individuals taken at the peripheral localities suggest fairly recent immigration to the north and west.

A midsummer peak in surface activity (chiefly but not exclusively by adults) is dramatically shown by the following breakdown of capture dates by month:

Fig. 3 Cariblatta lutea


January............... 0
February............. 0
March.................. 3
April................... 2
May .................. 41
June ................. 263
July.................. 296
August............... 23
September .......... 3
October ............... 1
November .......... 0
December........... 2

In contrast to the monotonous brown shades of other Virginia cockroaches, the color pattern of C. lutea is complex and attractively variegated (Fig. 3).

## ACKNOWLEDGMENTS

The generous cooperation of Christopher A. Pague and Kurt A. Buhlmann (formerly zoologists, Virginia Division of Natural Heritage, DCR) and Joseph C. Mitchell in donating extensive pitfall captures to VMNH is acknowledged with pleasure and appreciation.

## LITERATURE CITED

Blatchley, W. S. 1920. Orthoptera of Northeastern North America, with especial references to the faunas of Indiana and Florida. The Nature Publishing


Fig. 4 Distributional records for Cariblatta lutea in southeastern Virginia

Company, Indianapolis. 784 pp .
Brimley, C. S. The Insects of North Carolina, being a list of the insects of North Carolina and their close relatives. North Carolina Department of Agriculture, Raleigh. 560 pp.

Davis, W. T. 1926. An annotated list of the Dermaptera and Orthoptera collected in mid-summer at Wingina, Virginia, and vicinioty. Journal of the New York Entomological Society 34: 27-41.

Fox, H. 1917. Field notes on Virginia Orthoptera. Proceedings of the United States National Museum 52: 199-234.

Hebard, M. 1945. Orthoptera of the Appalachian

Mountains in the vicinity of Hot Springs, Virginia, and notes on other Appalachian species and recent extensions of the known range of still other southeastern species. Transactions of the American Entomological Society 71: 77-97.

Hubbell, T. H. 1936. A monographic revision of the genus Ceuthophilus (Orthoptera, Gryllacrididae, Rhaphidophorinae). University of Florida Publication, Biological Science Series 2(1): 1-551.

Rehn, J.A.G. \& M. Hebard. 1916. Studies in the Dermaptera and Orthoptera of the Coastal Plain and Piedmont Regions of the Southeastern United States. Proceedings of the Academy of Natural Sciences of Philadelphia for 1916: 87-314.

